Applicant: Marc Charles Florent Berckmans et al. Attorney's Docket No.: 19790-009US1

Serial No. : To Be Assigned Filed : Herewith

Page : 3 of 8

Amendment to the Claims:

Please amend claims 2-14, 16, 18 and 19 as follows. Please add new claims 20 and 21. The claims and their status are shown below.

- 1. (Original) A method of modifying starch or starch derivatives comprising: introducing a continuous flow of starch substrate, gas and, optionally, one or more reagents, into a reactor, wherein the starch substrate has a moisture content of between 0 and 45% by weight, a residence time in the reactor of between 1 and 60 minutes and is heated to between 50 and 220°C, characterised in that the starch substrate and the gas are introduced into the reactor in opposing directions and in that the reactor has a tubular body comprising a rotating shaft upon which is disposed one or a plurality of blades.
- 2. (Currently Amended) A method according to claim 1 wherein the blades have a tip speed of between 2 and 30 m/s, preferably between 3 and 25 m/s.
- 3. (Currently Amended) A method according to claim 1 or claim 2 wherein the starch substrate has a moisture content of between 1 and 30% by weight.
- 4. (Currently Amended) A method according to <u>claim 1</u> any one of the preceding claims wherein the starch substrate is selected from <u>the group consisting of</u> a native starch, <u>a</u> starch derivative, starchy material and mixtures of two or more thereof.
- 5. (Currently Amended) A method according to <u>claim 1</u> any one of the preceding claims wherein the starch substrate is introduced into the reactor in powder form.
- 6. (Currently Amended) A method according to <u>claim 1</u> any one of the preceding claims wherein the reagent is selected from <u>the group consisting of</u> a hydrolysing agent, an oxidation agent, an acid, a dextrinisation agent, an alkylation agent, an esterification agent, an etherification agent, a cross-bonding agent and mixtures of two or more thereof.
- 7. (Currently Amended) A method according to <u>claim 1</u> any one of the preceding claims wherein the reagent is selected from <u>the group consisting of</u> a mineral acid, a peroxide, an oxidising agent and mixtures of two or more thereof.
- 8. (Currently Amended) A method according to <u>claim 1</u> any one of the preceding claims wherein the one or more reagents are added in an amount between 0.001 and 20% by weight.
- 9. (Currently Amended) A method according to <u>claim 1</u> any one of the preceding claims wherein the one or more reagents are introduced into the reactor in liquid, powder or gas form.

Applicant: Marc Charles Florent Berckmans et al. Attorney's Docket No.: 19790-009US1

Serial No.: To Be Assigned Filed: Herewith Page: 4 of 8

10. (Currently Amended) A method according to <u>claim 1</u> any one of the preceding elaims wherein at least one of the one or more reagents is added to the starch substrate before being introduced into the reactor.

- 11. (Currently Amended) A method according to <u>claim 1</u> any one of the preceding elaims wherein the residence time of the starch in the reactor is between 2 and 45 minutes.
- 12. (Currently Amended) A method according to <u>claim 1</u> any one of the preceding elaims wherein the reaction is maintained at a temperature between 80 and 220°C.
- 13. (Currently Amended) A method according to <u>claim 1</u> any one of the preceding elaims wherein the gas introduced into the reactor is selected from <u>the group consisting of</u>: air, steam, nitrogen, carbon dioxide and a mixture of two or more thereof.
- 14. (Currently Amended) A method of preparing highly soluble starch comprising: introducing a continuous flow of starch substrate, gas, and[[,]] one or more reagents selected from the group consisting of a mineral acid, a peroxide and an oxidising agent, into a reactor, wherein the starch substrate has a moisture content between 1 and 30% by weight, a residence time in the reactor of between 2 and 45 minutes and is heated to between 80 and 220°C, characterised in that the starch substrate and the gas are introduced into the reactor in opposing directions and in that the reactor has a tubular body comprising a rotating shaft upon which is disposed one or a plurality of blades.
- 15. (Original) A method according to claim 14, wherein the reaction is carried out under alkaline conditions.
- 16. (Currently Amended) A method according to claim 14 or claim 15, wherein the highly soluble starch is from 70% to 100% soluble in water having a temperature of no more than 50°C.
- 17. (Original) Use of a reactor for the modification of starch or starch derivatives, said reactor having a tubular body comprising:
 - a rotating shaft upon which is disposed one or a plurality of blades; and
- at least two inlets, one for the introduction of a starch substrate and, optionally, one or more reagents, and one for the introduction of a gas, characterised in that the inlets are positioned such that the starch and gas are introduced into the reactor in opposing directions.

Applicant: Marc Charles Florent Berckmans et al. Attorney's Docket No.: 19790-009US1

Serial No.: To Be Assigned

Filed : Herewith Page : 5 of 8

18. (Currently Amended) Use according to claim 17 wherein the blade or blades have a tip speed of between 2 and 30 m/s, preferably between 3 and 25 m/s.

- 19. (Currently Amended) Use according to claim 17 or claim 18 for the hydrolysis, degradation, oxidation, acid degradation, dextrinisation, bleaching, etherification, esterification, cross-bonding, alkylation or acetylation of starch and/or starch derivatives.
- 20. (New) A method according to claim 1 wherein the blades have a tip speed of between 3 and 25 m/s.
- 21. (New) Use according to claim 17 wherein the blade or blades have a tip speed of between 3 and 25 m/s.